Ag Dominated Surface Water Body Categorization Report

City of Colusa Submission

Information needed to characterize individual Ag Dominated Surface Water Bodies
(to be used in conjunction with Water Body Categorization Flow Chart 1 and completed in partnership with the entity that manages/operates the Water Bodies evaluated within this document)

A. Water Body Categorization Information

I. General

1. Entity or district name and mailing address (include website address, if applicable)

   Applicant:
   City of Colusa

   Managing/operating entity:
   Independent operators

2. Manager or Contact Person (include phone and email)

   Jesse Cain
   Public Works Administrative Director
   publicworks@cityofcolusa.com
   (530) 458-4740 ext. 107

3. Complete the information needed in Table 1 as provided, with a separate record for each water body to be evaluated:

Table 1 Water Body Information

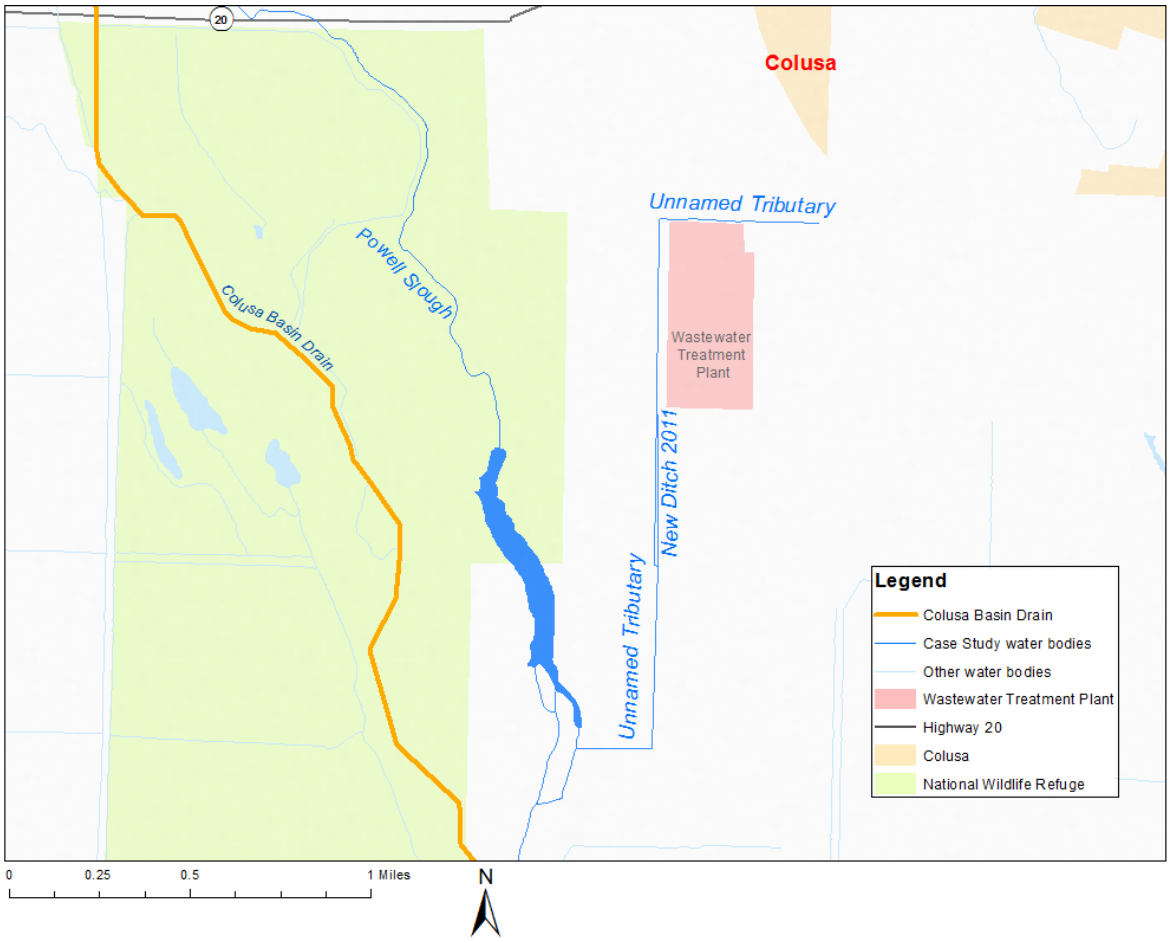
Name of water body	**Type** *(natural, modified, or constructed)*	**Ag Dominated Water Body Category** *(from Flow chart 1)*	**For Constructed or Modified**			**Length of water body or seg-ment (miles)**	**Water Type** *(e.g., Supply Water only, Ag return flows subsurface tile drainage water, municipal or industrial wastewater, storm water)*	**Flow Characteristics/ Flow Period**		**Channel Maintenance Activities and Frequency**
			Type of Construction or Modification *(e.g. earth-lined, concrete, underground pipe)*	**Year of Construction or Modification**	**Purpose(s) of Construction or Modification**			**Natural**	**Managed**	
Unnamed Tributary (to Powell Slough)	*constructed*	*C1*	*Earthlined*	*By 1930s*	*Ag Drainage*	*2.1*	*Ag Return Flows, Municipal Wastewater, Urban and Storm Runoff from the City of Colusa*	*Construc-ted water body – no natural flow*	*Intermittent flows which increase during irrigation and storm seasons. Most of the flow during other periods is due to City of Colusa's effluent discharge*	*Informal agreement between City of Colusa and local landowners for the city to clear the channel as needed (>4 years since last mainte-nance activity.)*
New Ditch 2011 (tributary to Unnamed Tributary)	*constructed*	*C1*	*Earthlined*	*2011*	*Ag Drainage*	*0.4*	*Ag Return Flows*		*Generally very low flow conditions except during irrigation season.*	*As needed by landowners*
Powell Slough	*modified*	*M1*	*Earthlined*	*By 1930s*	*Hold Ag Drainage for recycling*	*5*	*Ag Return Flows, Wetlands drainage, Storm flows during the winter*	*Variable during Winter Storm Season*	*Intermittent flows which increase during irrigation and storm seasons.*	*Generally no maintenance activities. Concrete was added to banks ~20 years ago.*

4. List sources, documents, reports or references used for making the Water Body Category (Flow Chart 1) determination provided in Table 1 for the area under consideration. Links to websites can also be provided if applicable.

   - Central Valley Water Board Staff Site Surveys of the Colusa area on 3/6/2012 (Central Valley Water Board, 2012a)
   - Central Valley Water Board Meeting Notes for a meeting on 3/14/2012 with Colusa Basin Drainage District and City of Colusa representatives. (Central Valley Water Board, 2012b)
   - Central Valley Water Board Meeting Notes for a meeting on 4/28/2014 with Colusa Basin Drainage District and City of Colusa representatives. (Central Valley Water Board, 2014)
   - National Hydrography Dataset –Powell Slough has a feature type attributes of "Stream/River" and "Artificial Path" (U.S. Environmental Protection Agency and the U.S. Geological Survey, 2005). The Unnamed Tributary has a feature type attribute of "Canal/Ditch".
   - Appendix A of this report shows photographs of the Unnamed Tributary, the New Ditch 2011, and Powell Slough
   - Appendix B of this report shows flow-related photographs of Unnamed Tributary and Powell Slough

5. Provide a map showing boundaries of the water bodies under consideration (USGS Quad or other map. (If Geographical Information System (GIS) shape files are available, include as an attachment)

Figure 1. Colusa Subarea



6. Source(s) of water to the area under consideration

-Ag Return Flows
Irrigation surface water supply to surrounding farmland is obtained by recycling Ag drainage water from Powell Slough and the Colusa Basin Drain or pumping groundwater.

- Refuge drainage
The Colusa National Wildlife Refuge obtains water principally from the Colusa Basin Drain and releases drainage water periodically into Powell Slough from the eastern portion of the refuge.

-Wastewater effluent from the City of Colusa's Wastewater Treatment Plant is discharged into the Unnamed Tributary year-round.

- Urban runoff from the City of Colusa is a potential source of water for the Unnamed Tributary.

- Storm water is a source of water during winter months.

II. Inflows and Outflows to Water Bodies

1. Map or schematic showing the key components of the surface water supply and drainage in the water bodies under consideration. The figure should include inflows and outflows to the water bodies and include (*if applicable*) the following:

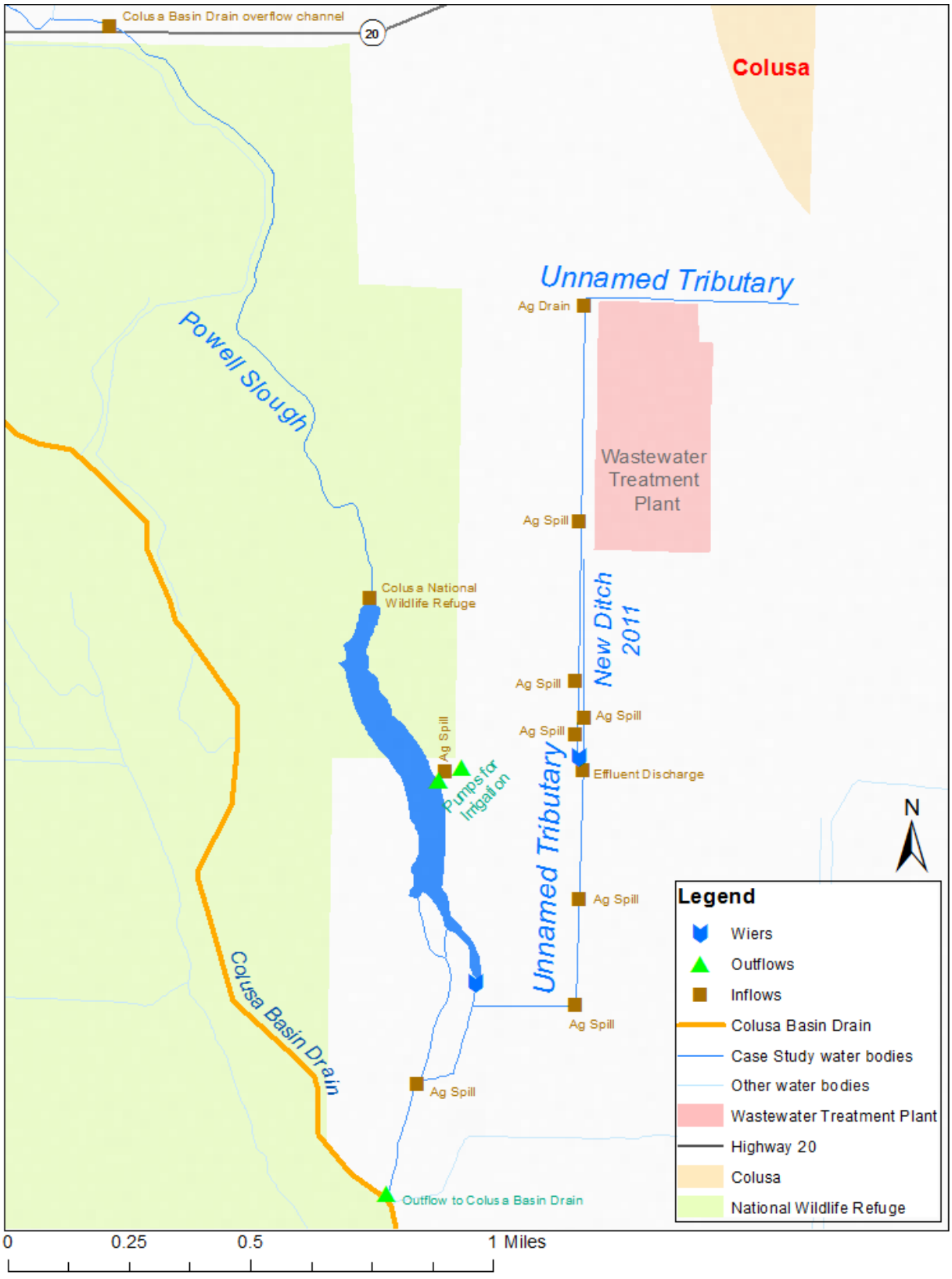
   a. Location of surface water supply (intake) points for the water bodies under consideration

   b. Location of ground water supply points for the water bodies under consideration (This should only include wells which pump directly into canals or drains or wells used to supply water outside the land owners' control)

   c. Location of operation spills from the water bodies under consideration

   The Colusa subarea water bodies under consideration are primarily used for Ag Drainage. Figure 2 on the next page shows the main inflows and outflows to the Unnamed Tributary, the New Ditch 2011 and Powell Slough. The majority of inflows are from surrounding Ag Drains with the exceptions of a gravity overflow channel that runs alongside Hwy 20 from the Colusa Basin Drain to Powell Slough, the refuge drainage into Powell Slough and the City of Colusa's effluent discharge into the Unnamed Tributary. The primary outflows are to the Colusa Basin Drain and from the Powell Slough pumps to provide irrigation water to fields.

Figure 2 Colusa Subarea - Inflows and Outflows



B. MUN Beneficial Use Evaluation

I. Municipal and Domestic Supply (MUN) use

a. List any known State Water Rights information pertaining to the municipal and/or domestic supply use in or downstream of the water bodies under consideration, even if the right has never been exercised (if applicable). *For more information on State Water Rights information and the use of database search and mapping tools, visit the following website: http://www.swrcb.ca.gov/waterrights/water_issues/programs/ewrims/*

No known State Water Rights records for a MUN use in the immediate water body under consideration or in the downstream water bodies prior to the Sacramento River.

b. Describe other municipal and/or domestic supply use of the surface water system after November 28, 1975 (if applicable).

No known MUN use on or after November 28, 1975. The City of Biggs and surrounding vicinities rely on ground water as their municipal source.

c. Map showing any diversion points in or downstream of the area under consideration where water is used for municipal and/or domestic supply.

NA – no diversions prior to Sacramento River

II. Water Quality Monitoring Program

1. Is the area under consideration covered by water quality monitoring under the Central Valley Irrigated Lands Regulatory Program (ILRP) or any other monitoring program?

Yes, the area falls under the Central Valley Irrigated Lands Regulatory Program.

A significant portion of the area under consideration is covered as part of the California Rice Commission (contact – Tim Johnson).

The area is also covered as part of the Sacramento Valley Water Quality Coalition (contact – Bruce Houdesheldt).

Information on monitoring sites, results and other information can be found at the following website:

http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/index.shtml

Website links may be provided in lieu of separately answering questions 2-6, if they adequately provide the same information as requested below. If such links are utilized, a Table or Figure reference and page number should be provided if needed. Alternately, information for #2 may be added to the map provided for the water body characterization under A.II.

2. Map showing the location and identifying number of all current and proposed water quality and/or flow monitoring points for all of the following that exist in the area being considered including *as applicable*:

   a. Supply water to the area under consideration

   b. Collected subsurface and surface drainage entering the area under consideration

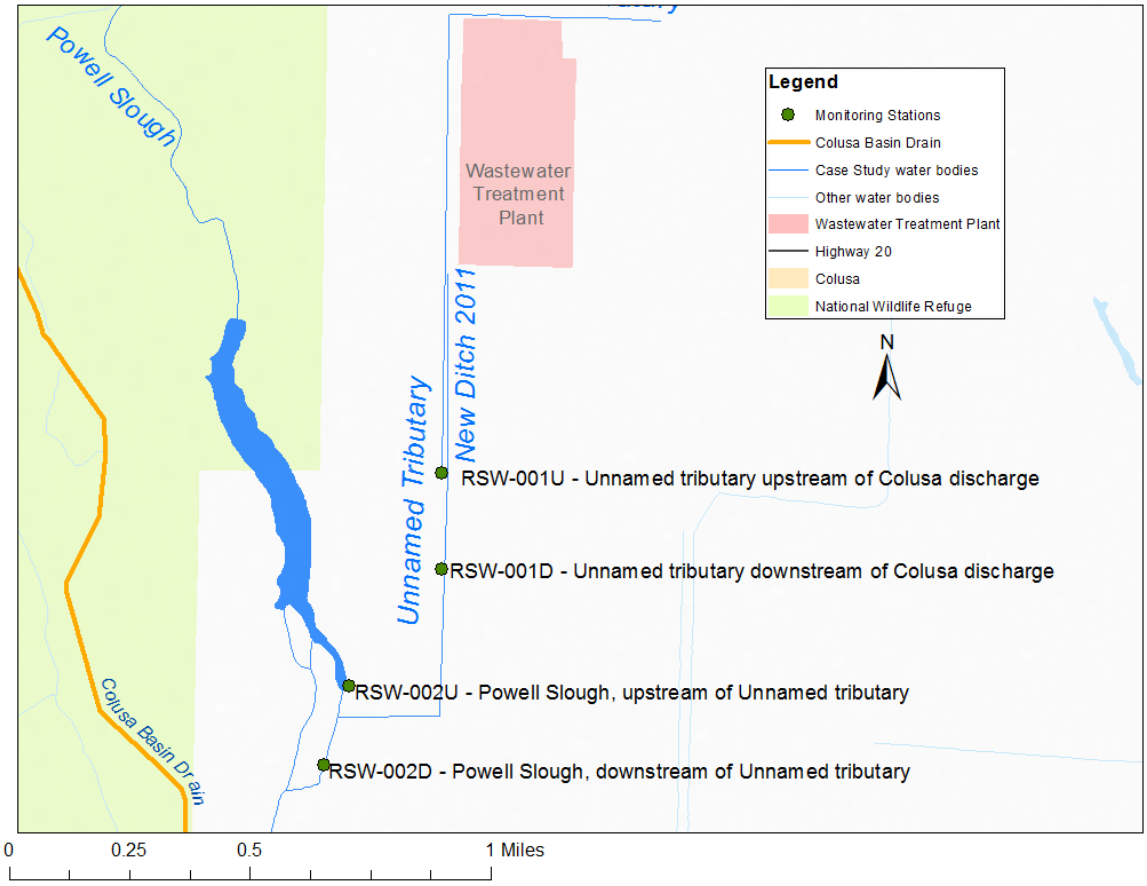
   c. Surface water drainage system

   d. Drains carrying subsurface drainage water or blended water

   ****The map must show monitoring station(s) that represent discharge of Ag drainage from the area under consideration**

   Figure 3 is a map of monitoring sites for the City of Colusa along the Unnamed Tributary and Powell Slough.

Figure 3 City of Colusa's NPDES Monitoring Locations in the area under consideration



3. Summarize in existing report or in an attached EXCEL format: monitoring location and identifying number, parameters measured, frequency, period of anticipated sampling (e.g. 2014-2016, ongoing, etc.) and location of resulting data.

Note – There are no ILRP sampling sites directly in the water bodies under consideration. For monitoring sites in the area, a full description of the monitoring and reporting plans for the Sacramento Valley Water Quality Coalition, the California Rice Commission, and the City of Colusa (including locations, frequency and sampling periods) can be found in the links provided in answer 4 below.

City of Colusa Wastewater Treatment Plant NPDES Monitoring

City of Colusa Wastewater Treatment Plant NPDES Self-monitoring (Receiving Waters) is conducted at RSW-001U (50 feet upstream from discharge on Unnamed Tributary), RSW-001D (200 feet downstream from discharge on Unnamed Tributary), RSW-002U (250 feet upstream of Unnamed Tributary in Powell Slough), and RSW-002D (400 feet downstream of Unnamed Tributary confluence in Powell Slough) for the following:

Monitoring Parameter	Minimum Sampling Frequency
pH	2/Month
EC	2/Month
Dissolved Oxygen	2/Month
Turbidity	2/Month
Temperature	2/Month
Hardness	1/Month
Radionuclides	1/Year
Ammonia	1/Month[2]
Priority Pollutants and additional constituents specified in the permit's Attachment G	1/Year[1,2]
Receiving Water Conditions	Every sampling event

4. Summary of the available monitoring data including parameters measured, number of analyses , and inclusive dates of sampling

   Monitoring and Assessment Reports for the Irrigated Lands Regulatory Program for the California Rice Commission and the Sacramento Valley Water Quality Coalition can be found at:

   http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/monitoring_plans_reports_reviews/index.shtml

   Monitoring Data collected since 2004 under the Irrigated Lands Regulatory Program can be found at:

   http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/water_quality_monitoring/index.shtml

   All ILRP data is eventually loaded into the California Environmental Data Exchange Network (www.ceden.org)

   The City of Colusa's NPDES Monitoring and Reporting requirements can be found at:

   http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/colusa/r5-2008-0184.pdf

   Link to City of Colusa Wastewater Treatment Plant NPDES Self-Monitoring Reports can be found via the CIWQS database at:

   https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/PublicReportEsmrAtGlanceServlet?inCommand=reset

   Search Criteria:

Facility Name: “Colusa WWTP”
County: Colusa

If the area under consideration is covered by the Irrigated Lands Regulatory Program, list any Management Plans previously developed or currently under development. For areas not covered by the Irrigated Lands Regulatory Program, list any known or suspected water quality concerns (including elevated background concentrations in surface or groundwater supplies).

Sacramento Valley Water Quality Coalition Management Plan

There are no management plans currently for these Colusa Subarea case study water bodies

Link to website on Management Plans:
http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/management_plans_reviews/coalitions/sacramento_valley_waterquality/index.shtml

California Rice Commission Management Plans:
2010 – Propanil, Algae (for entire region)

Link to website on Management Plans:
http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/management_plans_reviews/coalitions/california_rice_commission/index.shtml

Works Cited

Central Valley Water Board. (2012a). *Staff Survey Write-up for the City of Colusa/MUN Beneficial Use Project, March 6, 2012.* Colusa.

Central Valley Water Board. (2012b). *Meeting Notes - March 14, 2012 Colusa Basin Drainage District.* Willows.

Central Valley Water Board. (2014). *Meeting Notes - April 28, 2014 Colusa Stakeholder Meeting.* Colusa.

U.S. Environmental Protection Agency and the U.S. Geological Survey. (2005). National Hydrography Dataset Plus - NHDPlus, Edition 1.0.

Appendix A – Photos of Colusa Subarea Water Bodies

Photo 1. Unnamed Tributary to Powell Slough, downstream of effluent discharge (looking upstream) – April 16, 2012

Photo 2. New Ditch (2011) upstream of effluent discharge (looking downstream) – June 28, 2012

Photo 3. Powell Slough upstream of Unnamed Tributary confluence (looking upstream) – April 16, 2012

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Photo 4. Weir on Unnamed Tributary, upstream of effluent discharge – June 28, 2012

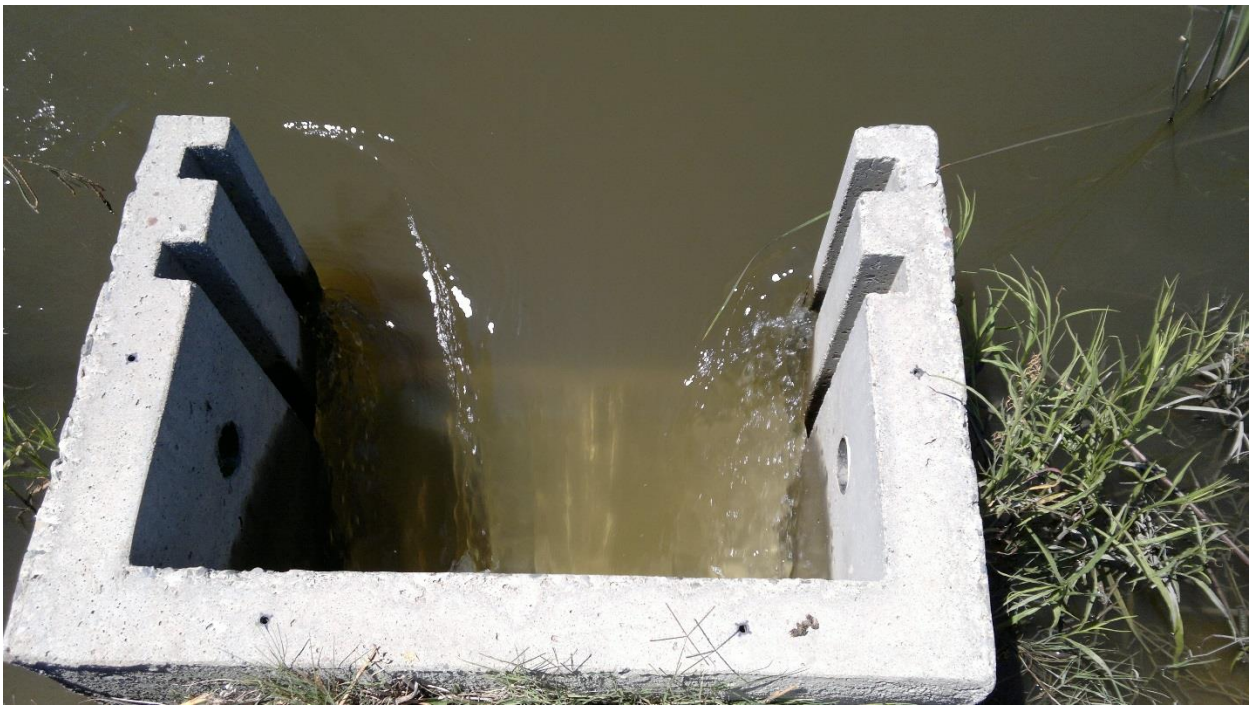

Photo 5. Weir on Powell Slough, upstream of Unnamed Tributary confluence (looking upstream) – June 28, 2012

Photo 6. Field spill pipe from adjacent rice field to Unnamed Tributary (looking upstream) – June 28, 2012

Appendix B – Flow-related Photos in Colusa Subarea Water Bodies

Photo 1. High Flow Period during irrigation season, Unnamed Tributary upstream of effluent discharge (looking upstream) –June 28, 2012

Photo 2. Low Flow Period after irrigation season, Unnamed Tributary upstream of effluent discharge (looking upstream) –October 9, 2012

Photo 3. High Flow Period during storm season, Unnamed Tributary upstream of effluent discharge (looking upstream) –December 26, 2012

Photo 4. High Flow Period during irrigation season, Powell Slough, upstream of Unnamed Tributary confluence (looking downstream) – June 28, 2012

Photo 5. Low Flow Period, Powell Slough, upstream of Unnamed Tributary confluence (looking downstream) – October 9, 2012

Photo 6. High Flow Period during storm season, Powell Slough, upstream of Unnamed Tributary confluence (looking downstream) – December 26, 2012